

24.6730
26.2331

27162
S/057/61/031/009/002/019
B109/B138

AUTHORS:

Luk'yanov, S. Yu., Podgornyy, I. M., Chuvatin, S. A.

TITLE:

Investigation of the electrodynamic acceleration of plasmoids. III (Coaxial system)

PERIODICAL:

Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1026-1032

TEXT: Experimental means, investigation methods, and results of measurements of the electrodynamic acceleration of plasmoids are given. Apparatus (Fig. 1): length of injector 1,000 mm, capacitor bank of 75 microfarads, charged to 10-20 kv, pressure in the test tube about 10^{-6} mm Hg, gas amount introduced about 0.3 cm^3 . The total energy of a plasmoid is determined calorimetrically, the velocity photoelectrically by measuring the time of flight. The mass-spectroscopic analysis of a plasmoid was conducted by the Thomson parabola method (magnetic field 80-790 oersteds, voltage 100-1,325 v). Results of measurement: Fig. 2 shows the calorimetrically found radial distribution of the energy density for capacitor bank voltages of 20 kv (1), 15 kv (2), 10 kv (3). These

Card 7/6

Investigation of the ...

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B109/B138

values of the total kinetic energy are compared with the photoelectrically measured directional velocity of the plasmoid, from which the efficiency of the injector and the number of accelerated particles is estimated (Table 1). Table 2 shows the mass-spectroscopic investigation of the mass composition of a plasmoid for various gases. The photoelectric measurement of velocity fails for fast particles; it must then be determined from the blackenings of the photoemulsion recording the mass-spectroscopic data.

Values of up to $3.5 \cdot 10^8$ cm/sec are found for protons. The formation of very fast particles is not due to the usual acceleration in the electric field since the energy of these particles often surpasses the field energy eU_0 (U_0 discharge voltage). The authors think it probable that the

existence of these fast particles is due to the reasons found by L. A. Artsimovich, A. M. Andrianov, Ye. I. Dobrokhotov, S. Yu. Luk'yanov, I. M. Podgornyy, V. I. Sinitsin, N. F. Filippov (Atomnaya energiya, 3, 84, 1956) according to which the formation of such particles is possible with strong pulse discharges. The authors thank V. D. Pis'menn and V. M. Chicherov for measurements made. There are 3 figures, 3 tables, and 13 references: 9 Soviet-bloc and 4 non-Soviet-bloc.

Card 2/6

27521

S/089/61/011/004/002/008

B102/B138

24.6740

26.2321

AUTHORS:

Luk'yanov, S. Yu., Podgorny, I. M.

TITLE:

Magnetic traps with cusped fields

PERIODICAL:

Atomnaya energiya, v. 11, no. 4, 1961, 336 - 344

TEXT: The authors review problems of plasma trapping by strong magnetic fields of complex configuration (such as used in the "Ogra", "Zeta", or stellarator systems). The behavior of plasma in this kind of trap is discussed and principal experimental data are compared. The type of trap considered is as shown in Fig. 1 produced by two coaxial coils which are oppositely directed, so that around zero point the components of field strength will increase with the coordinates: $H_z = aZ$; $H_r = -ar/2$. If plasma is injected ideally into the center of the trap ($H=0$), it will press apart the lines of force, filling the region of weak field so that a plasma-free central domain is formed. The plasma then withdraws through an annular magnetic gap $4q_e$ in width (q_e - Larmor radius of electrons at the gap). At the same time, however, mutual diffusion starts between field

Card 1/4

Magnetic traps with...

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S/089/61/011/004/002/008
B102/B138

and plasma, the width of the gap increases, and it moves along the lines of force. Where there is pressure equilibrium, the extension rate of the annular gap will coincide with the rate of formation of the skin layer, and will not depend on magnetic field. The time dependence of the plasma density may be described by $dN/dt = -nv_i S/4$, where n is the total number of particles in the field-free region, n the plasma density, v_i the ionic velocity, and S the area of the magnetic gap. This theoretical representation of the behavior of a trapped plasma differs from the real behavior, especially since the behavior and characteristics of a trapped plasma are closely related to the method of injection. The ideal injector which would fill the trap with hot plasma in minimum time, has not yet been found. With actual injectors there is some intermingling between field and plasma, and the field equation has to be accomplished by a time-dependent term which also takes into account injector effects. A model of a partly pure plasma with entrapped magnetic flux is discussed. In all cases, the time of escape is finite. In the second part of the paper, some experimental data are discussed and compared; most of them are taken from non-Soviet publications. Details of the "Orekh" apparatus

Card 2/4

Magnetic traps with...

27521

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B102/B138

(I. M. Podgorny, V. N. Sumarokov, Paper no. 204/A, Salzburg Conference on Plasma Physics, 1961), and axisymmetric system of 900 mm diameter, 1200 mm length, and a magnetic field of 4.5 kilogauss, are given. The plasma density in it reaches $10^{13} - 10^{14} \text{ cm}^{-3}$, and its life is 60 μsec . Some particular results gained at the Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic Energy imeni I. V. Kurchatov) are discussed in brief. Finally, it is pointed out that future research and experiments should be aimed at producing plasma with higher initial temperatures and densities. This means improving existing injectors as well as changing the geometries of injection and traps. The authors thank L. A. Artsimovich, I. I. Gurevich, S. M. Osovets, and O. B. Firsov for discussions. There are 13 figures, 2 tables, and 16 references: 7 Soviet and 9 non-Soviet. The four most recent references to English-language publications read as follows: Watteau, Phys. Fluids, 4, 607 (1961); F. Coensgen, A. Sherman et al. Phys. Fluids, 3, 764 (1960); Nucl. Sci. Abstrs, 14, 24A, 3400 (1960); F. Scott, H. Woorhies. Phys. Fluids, 4, 600 (1961).

SUBMITTED: June 18, 1961

Card 3/4

20455

S/056/61/040/002/008/047

B113/B214

26.2212
26.2321

AUTHORS: Luk'yanov, S. Yu., Podgornyy, I. M., Sumarokov, V. N.

TITLE: Confinement of a plasma in traps with a magnetic field increasing toward the periphery

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 2, 1961, 448-451

TEXT: This work represents a continuation of an earlier work (c.f. J. Nuclear Energy, Part C, 1, 236, 1960). Also in this case, a coaxial electrodynamic injector which created accelerated hydrogen clusters, was used for filling the trap with plasma. The plasma parameters in the trap of the accelerated clusters were measured, for which purpose a vacuum chamber of stainless steel was employed; its height was 100 cm, and its diameter 21 cm. The magnetic field of 1500 oe was generated by two solenoids in the circuit of the injector. Langmuir probes were used for measuring the plasma parameters. As is seen from Fig. 1, in the region of the trap there exists a plasma long after switching off the discharge current ($C = 2.5 \mu F$, $V = 3 - 11$ kv) in the injector circuit. The confine-

Card 1/1

Confinement of a plasma in...

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B113/B214

ment time is about $40\mu\text{sec}$. Probe measurements showed that the density of the charged particles in the trap increases with increasing potential of the injector. This is inferred from Fig. 2, in which the ion saturation current J on the probe is shown as a function of the injector potential. Assuming that the temperature of the charged particles remains unchanged, the saturation current is proportional to the ion concentration. Measurements at different injector potentials showed that the electron temperature remained unchanged in both cases. On switching off the magnetic trap no accumulation of the plasma was observed in the vacuum chamber (Fig. 3). A comparison of Figs. 1 and 3 shows that a confinement of the plasma takes place within a certain time. To observe the different stages of plasma formation in the trap, ultrahigh-speed photography was applied. To observe the processes better, a vacuum chamber made of glass instead of steel was used. The magnetic trap used here is shown schematically in Fig. 4 (field = 6000 oe, duration of a field pulse = $2000\mu\text{sec}$). It was found that after the end of injection, the plasma does not leave the trap immediately. Now and then the plasma exhibited an abnormal behavior. In this case, the lifetime of the plasma was much shorter than that in the case represented in Fig. 5. It is not

Card 2,7

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Confinement of a plasma in...

yet clear, however, whether the observed abnormal behavior of the plasma is a consequence of a macroscopic instability or is connected with the method of filling the trap with plasma. There are 6 figures and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: August 24, 1960

Card 3/7

L 20385-66 EWT(1)/ETC(f)/EPF(n)-2/ENG(m)/ETC(m)-6 IJP(o) WW/AT

ACC NR: AT6001560

SOURCE CODE: UR/3136/65/000/911/0001/0020

AUTHOR: Kovan, I. A.; Podgornyy, I. M.; Rusanov, V. D.; Smirnov, V. P.; Spektor, A. M.; Frank-Kamenetskiy, D. A.

ORG: Institute of Atomic Energy im. I. V. Kurchatov (Institut atomnoy energii) 72 68

TITLE: ²¹ Magnetosonic heating of a plasma ²¹ BH

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-911, 1965. Magnitno-zvukovoy nagrev plazmy, 1-20

TOPIC TAGS: magnetoacoustic effect, magnetoactive plasma, plasma resonance, plasma waveguide, plasma oscillation, plasma heating, magnetic trap/ Vega

ABSTRACT: The authors present results of a study of excitation, propagation, and absorption of oblique magnetic-sound waves in a hydrogen or helium plasma at 10--30 Mcs. More attention than in the past is paid to the excitation of magnetic-sound waves, and particularly magnetic-sound resonance in a confined plasma. Various experiments with direct magnetic-sound waves are discussed and experiments aimed at heating plasma with the aid of oblique waves and magnetic-sound resonance are described. A "Vega" adiabatic trap with high frequency source of cold plasma, designed for this purpose is briefly described. The plasma in these experiments was produced by high frequency discharge, using generators operating at 20--50 Mcs

Card 1/2

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ACC NR: AT6001560

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with a nominal power of ~200 kw. The transverse field was produced by discharging a capacitor through a solenoid. The magnetic-field pulse was 20 msec. The investigations have shown that when beyond-cutoff plasma-waveguide conditions are produced resonance accumulation of energy is possible in the plasma column when the magnetic sound wave propagates almost transverse to the static magnetic field. This phenomenon is treated as magnetic-sound resonance at lower radial modes. The spatial amplification obtained in strong magnetic fields corresponds to a resonator $Q \sim 15$, assuming that only transverse waves are excited in the resonator. This value of Q is limited by dissipative mechanisms, particularly nonlinear processes. The study of the oblique magnetic-sound waves has shown that the dissipative processes can be more intense here and that in the case of nonstationary waves of large amplitude a nonlinear dissipation, connected with collective mechanisms, can arise. The experiments have also shown that such a wave can be used to transfer energy effectively to the electronic component. The two plasma heating methods considered (resonant and shock-wave) can be particularly promising for the production of hot plasma in toroidal traps. The authors thank Ye. K. Zavoytskiy, M. A. Leontovich, B. B. Kadomtsev, and V. D. Shafranov for numerous discussions. Orig. art. has: 11 figures and 11 formulas.

SUB CODE: 20/ SUBM DATE: none / ORIG REF: 028/ OTH REF: 003

Card 2/2 BK

L 22410-66 ENT(1)/EPF(n)-2/ENG(m) IJP(c) AT
ACC NR: AP6007953 SOURCE CODE: UR/0089/66/020/002/0143/0149

AUTHORS: Vdovin, V. L.; Podgorny, I. M.; Rusanov, V. D. 52

ORG: none 8

TITLE: Effect of plasma density on the results of spectroscopic
determination of the electron temperature. 21,44,55

SOURCE: Atomnaya energiya, v. 20, no. 2, 1966, 148-149 21,44,55

TOPIC TAGS: plasma density, plasma electron temperature, spectral
line, helium plasma, hydrogen plasma

ABSTRACT: In view of the fact that the values of the electron temperature determined from the excitation functions of various helium lines are not uniquely defined, and are influenced by secondary processes such as the pressure of the neutral helium and the density of the plasma electrons, the authors have undertaken a comparison of the electron temperature as determined with two pairs of lines (4922, 4713, and 5047, 4713 Å) with one another, and also with the results

Card 1/3

UDC: 533.9 2

L 22410-66

ACC NR: AP6007953

of probe measurements. The experiments were made essentially in a helium plasma of high frequency discharge in a magnetic field, in a pressure interval $3 \text{ -- } 10 \mu$. The generator frequency was 25 Mc, and the active power fed into the plasma reached 4 kw. The ratio of the spectral-line intensity was determined with a monochromator with photomultiplier. The main measurements were made with a double electric probe that could be displaced radially in the chamber. The plasma density was determined with probe measurements using a Fabry-Perot interferometer operating at 8 mm wavelength. At electron densities $\sim 10^{12} \text{ cm}^{-3}$ the temperatures obtained by optical measurements using the 4922 and 4713 Å pair exceed by a factor of more than two the results of the probe measurements. The results coincide at $\sim 3 \times 10^{11} \text{ cm}^{-3}$. The temperature determined optically for the 5047 and 4713 Å lines is approximately half the temperature obtained with probe measurements at a density $n_e > 6 \times 10^{11} \text{ cm}^{-3}$. At lower concentrations the results agree well. Measurements in hydrogen show

Card 2/3

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ACC NR: AP6007953

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better agreement. It is concluded therefore that the method used to determine the electron temperature from the relative intensity of the helium lines, in the form used in many experiments, can lead to appreciable errors. Orig. art. has: 1 figure

SUB CODE: 20/ SUBM DATE: 01Sep65/ ORIG REF: 002/ OTH REF: 003

Card 3/3 *LLW*

PODGORNYY, I.N.; SHOLIN, G.V.

Measurement of electron temperature on the basis of helium line intensities. Dokl. AN SSSR 160 no.3:575-577 Ja '65.

(MIRA 18:3)

1. Submitted August 21, 1964.

ZAPRUTSKIY, B.Z., inzh.; PODGORNYY, I.M., inzh.

RZSH-1 machine for cleaning and sealing joints. Stroil. i dor. mash.
9 no.7:16-17 J1 '64. (MIRA 18:13)

PODGORNIY, I.M.

Confinement of a highly concentrated plasma in adiabatic traps.
Usp. fiz. nauk 85 no.1:65-86 Ja '65.

(MIRA 18:2)

L 43705-65 EWT(1)/EPF(n)-2/ENG(m)/EPA(i)-2 PI-6/PC-4/PAL-10/PI-4 IJP(c) WM/AT/
 ACCESSION NR: AT5009757 UR/0000/64/004/000/0085/0090 GS

AUTHOR: Koval'skiy, N. G., Podgornyy, I. M.

TITLE: The behavior of plasma surrounded by a magnetic barrier

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady soveshchaniya, v. 4. Riga, Izd-vo AN LatSSSR, 1964, 85-90

TOPIC TAGS: trapped plasma behavior, plasma radiation spectrum, magnetic gap width, trapped plasma lifetime, magnetic trap

ABSTRACT: The paper describes the results of experiments carried out with the magnetic trap "Orekh" (Nut) consisting of four coaxial coils. The maximum field strength within the magnetic gaps was 4000 Oe, the vacuum chamber was 1000 mm in diameter, and the plasma was injected axially by means of an electrodynamic injector. While earlier papers by different authors (see, e.g., F. Scott, H. Woorhies, Phys. Fluids, 1961, 4, 600; D. S. Kheygerman, Doklad na Mezhdunarodnoy konferentsii po issledovaniyam v oblasti fiziki plazmy i upravlyayemogo termoyadernogo sinteza Salzburg, 1961) elucidated various features of this type of magnetic traps, numerous questions remained unanswered. Consequently, the present authors carried out 1) spectroscopic measurements of the plasma radiation in the visible and ultraviolet Cord 1/2

L 43705-65

ACCESSION NR: AT5009757

regions; 2) determinations of plasma temperatures using Doppler line widening; 3) measurements of the changes of the magnetic gap width in time (via bolometric wall heat-current measurements); and 4) determination of the maximum lifetime for low density plasma particles (200 μ sec). "The authors thank L. L. Gorelik and V. V. Sinitsyn for lending the bolometers and their help during the bolometric measurements." Orig. art. has: 2 formulas, 2 figures, and 1 table. 2

ASSOCIATION: None

SUBMITTED: 11Aug64

ENCL: 00

SUB CODE: ME, EM

NO REF SOV: 003

OTHER: 004

llc
Card 2/2

L 40744-65 EWT(m)/EPF(c)/ENP(t)/ENP(b) Pr-4 IJP(c) JD
ACCESSION NR: AP5005885 S/0020/65/160/003/0575/0577

AUTHORS: Podgornyy, I. M.; Sholin, G. V.

TITLE: Concerning the measurement of the electronic temperature from the ratio of the helium line intensities

SOURCE: AN SSSR. Doklady, v. 160, no. 3, 1965, 575-577

TOPIC TAGS: plasma temperature, electron temperature, helium line, line intensity, temperature measurement

ABSTRACT: It is shown that the determination of the electron temperature from the ratio of the intensities of certain helium lines ($2^1P \rightarrow 4^1D$ 4922 Å and $2^3P \rightarrow 4^3S$ 4713 Å) may sometimes give incorrect results. In particular, there exist processes which limit the possibility of the use of this method when the plasma concentration rises above a certain critical value, for then the populations of the

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ACCESSION NR: AP5005885

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4^1D and 4^3S levels are determined not only by excitation from the ground state and by spontaneous emission, but also by transitions, due to electron collisions, between states within a given principal quantum number. The conditions when the contribution of the collision transitions become appreciable are determined. A value of 10^{12} cm^{-3} is obtained for the critical electron density in the plasma. At this density and for an electronic plasma temperature of 5 eV the temperature determined from the ratio of the intensities of the 4713 and 4922 Å lines may be overestimated by a factor of 2. The method is therefore applicable only at concentrations smaller than $3 \times 10^{11} \text{ cm}^{-3}$. Formulas are derived for the relative probabilities of the collision transitions. Conditions under which the error is minimized are briefly discussed. This report was presented by Ye. K. Zavoytskiy. Orig. art. has: 4 formulas.

ASSOCIATION: None

Card 2/3

L 40744-65
ACCESSION NR: AP5005885

SUBMITTED: 08Jul64

ENCL: 00

SUB CODE: OP, GP

NR REF SOV: 001

OTHER: 007

Card ¹⁰⁰ 3/3

ZAPIS-TEKIY, B.Z., inzh.; PODGORNYY, I.M., inzh.

Vibration roller attached to the T-16 self-propelled chassis.
Stroci. i dor. mash. 9 no.9:10-11 S '64.

(MIRA 17:11)

PODGORNYI, I.M.; SUMAROKOV, V.M.

Study of the behavior of a plasma in a magnetic trap with
axial current (system H). Zhur. tekhn. fiz. 34 no.5:333-340
My'64 (MIRA 17:8)

ACCESSION NR: AP4035692

S/0057/64/034/005/0833/0840

AUTHOR: Podgorny^y, I.M.; Sumarokov, V.N.

TITLE: Investigation of the behavior of plasma in a magnetic trap with an axial current

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 833-840

TOPIC TAGS: plasma compression, magnetic trap, biconical cusp, axial current, biconical cusp, ion temperature, ionized carbon line, NIMFA-1 machine

ABSTRACT: This paper reports experiments on the confinement of plasma in a biconical cusp with an auxiliary azimuthal magnetic field produced by an axial current. The purpose of the auxiliary field was to minimize loss of adiabaticity and consequent escape of plasma through the annular cusp and to increase compression efficiency. The experiments were performed with the NIMFA-1 installation. The biconical cusp was formed in a 20-cm-diameter, stainless-steel tube by discharge of a capacitor through two coils separated by approximately 15 cm. The discharge time was 6 millisecc, and the field reached 5000 Oe in the region of the cusp. The auxiliary field was produced by discharge of a 1500-microfarad capacitor through an axial rod.

Card

1/3

ACCESSION NR: AP4035692

The rod [diameter not given] was insulated with polyethelene and was enclosed in a grounded stainless-steel tube. The discharge time was 300 microsec and the current reached a maximum of 100 kA. Bursts of hydrogen plasma from a coaxial cylindrical gun were injected along the axial rod at a time when the current in the rod was only 10% of its maximum value. A diaphragm with an annular opening (radii 13 and 15 mm) permitted entrance of the plasma and minimized entrance of neutral atoms. Application of the increasing axial current resulted in a decrease of the confinement time by a factor of 3 to 5 but also in a considerable increase of the temperature attained. Without the axial current, the spectrum consisted of neutral hydrogen and singly ionized carbon lines. The intensity of these lines decayed with a time constant of 40 to 60 microsec. When the axial current was present, the most prominent line was C III 4647 Å. This reached its maximum intensity after the C II 4267 Å line had nearly disappeared, and then it faded rapidly. The C IV 2530 Å line was not observed. That the failure to observe the C IV line was due to rapid loss of plasma was confirmed by bolometer measurements of plasma loss through the cusp. From the spectrum data, the electron temperature was estimated to reach 20 to 30 eV. The ion temperature, in the absence of the axial current, was found by probe measurements to be 10 eV. Calorimetric measurements showed that the ion temperature reached 20 to 25 eV when the axial current was present. Orig. art. has: 3 figures and 3 formulas.

Card 2/3

ACCESSION NR: AP4035692

ASSOCIATION: none

SUBMITTED: 10Jun63

SUB CODE: ME, EN

ATD PRESS: 3080

NR REF SOW: 003

ENCL: 00

OTHER: 004

Card 3/3

ACCESSION NR: AT4025318

S/0000/63/000/000/0270/0273

AUTHORS: Gorelik, L. L.; Koval'skiy, N. G.; Podgorny*y, I. M.;
Sinitsy*n, V. V.

TITLE: Investigation of plasma in an "Orekh" magnetic trap with the
aid of special bolometers

SOURCE: Diagnostika plazmy* (Plasma diagnostics); sb. statey.
Moscow, Gosatomizdat, 1963, 270-273

TOPIC TAGS: plasma magnetic field, magnetic mirror, plasma con-
finement, bolometer, thin film

ABSTRACT: The spatial and time distributions of heat flow from the
wall of a magnetic-trap vacuum chamber with a field that increases
towards the periphery were investigated to ascertain the influence
of the region near the point of zero field in the escape of charged
particles at low plasma concentrations, and also the character of

Cord 1/5

ACCESSION NR: AT4025318

time variation of the width of an annular magnetic slot. Several specially developed bismuth bolometers were used to measure the heat flow from an "Orekh" magnetic trap. The bolometer constructions are described. Measurements of the magnetic gap have shown that the width of the gap is larger at small values of the magnetic field, and the experimentally observed broadening of the magnetic gap can be sufficiently well explained by classical diffusion. The escape of plasma particles was measured by introducing a metallic cylinder into the trap and measuring the heat escaping through the magnetic gaps with germanium bolometers. In the case of the first configuration of the magnetic field in the trap it was found that the particle escape from the system is due to loss of the adiabatic invariant on entering the region of weak magnetic field near the center, whereas in the case of the second configuration the plasma is essentially concentrated in the region of the weak magnetic field near the center. Thin film bolometers were also used to measure the escape of heat from the trap for plasma of high density ($\sim 10^{14} \text{ cm}^{-3}$)

Card 2/5

ACCESSION NR: AT4025318

and low density (10^{12} cm^{-3}). The escape times were found to be 60--70 and 150--200 microseconds, respectively. The bolometers described can be used to solve various problems in plasma physics. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 19Oct63

DATE ACQ: 16Apr64

ENCL: 02

SUB CODE: ME

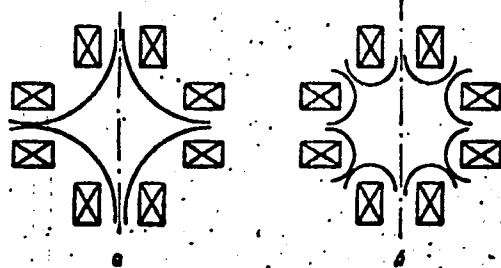
NR REF SOV: 004

OTHER: 000

Card 3/5

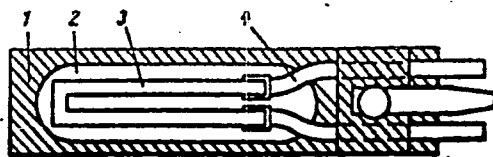
ACCESSION NR: AT4025318

ENCLOSURE: 01



Magnetic field configurations in the 'Orekh' trap

Card 4/5



Construction of bismuth bolometer:

1 - frame, 2 - oxidized-aluminum foil, 3 - thermoresistance of lead-bismuth alloy, 4 - silver leads

Card 5/5

ZEMTSOV, Yu. K.; PIS'MENNY V. D.; PODGORNYY, I. M.

Electron temperature in a high-power impulsive discharge.
Dokl. AN SSSR 155 no. 2:312-315 Mr '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet. Predstavleno akademikom
L. A. Artsimovichem.

PODGORNYI, I.M.; SUMAROKHOV, V.N.

[Injection of plasma clots into a magnetic trap with a field growing stronger toward the periphery] Inzhetsiia
sgustkov plazmy v magnitnuiu lovushku s polem, vozra-
staiushchim k periferii. Moskva, In-t atomnoi energii
AN SSSR, 1960. 14 p. (MIRA 16:12)
(Magnetic fields) (Plasma (Ionized gases))

PODGORNIY, I.M., laureat Leninskoy premii

"Promethai of the new era." Nauka i zhizn' 30 no.4:64b-64c
Ap '63. (MIRA 16:7)

(Motion pictures, Documentary)

PIS'MENNYI, V.D.; PODGORNIY, I.M.; SUKEVER, Sh.

Vacuum ultraviolet rays from a powerful pulsed discharge. Zhur.
eksp.i teor.fiz. 43 no.6:2008-2014 D '62. (MIRA 16:1)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo
universiteta.

(Electric discharges)

(Ultraviolet rays)

GORELIK, L.L.; KOVAL'SKIY, N.G.; PODGORNIY, I.M.; SINITSYN, V.V.

Study of the escape of plasma through the magnetic gaps of traps with a field intensifying toward the periphery. Dokl. AN SSSR 147 no.3:576-579 N '62. (MIRA 15:12)

1. Predstavleno akademikom L.A. Artsimovichem.
(Plasma (Ionized gases)) (Magnetic fields)

PODGORNIY, Ivan Trofimovich; SMAGORINSKIY, B., red.

[Creative approach; practice in introducing small-scale mechanization] Tvorcheskii podkhod; iz opyta vnedreniia maloi mekhanizatsii. Volgograd, Nizhne-Volzhskoe izd-vo, 1964. 17 p. (MIRA 18:2)

PODGORNYI, K., starshiy inzh.-leytenant; NIKULIN, Ye., kapitan tekhnicheskoy
sluzhby

Eight times faster. Av.i kosm. 44 no.3:60-61 '62. (MIRA 15:3)
(Airplanes--Maintenance and repair)

PODGORNYI, L.N.

Analysis of water with the aid of the KU-2 cation ex-
changer. Zav.lab. 26 no.6:717-719 '60.
(MIRA 13:7)

1. Tsentral'no-Kazakhstanskoye geologicheskoye upravleniye.
(Water--Analysis) (Ion exchange)

PODGORNIY, L. N., Cand Chem Sci --- (diss) "Cationito-trilonobyy \angle ?_7
analysis of natural waters." Novochoerkassk, 1960. 20 pp; (Ministry of
Higher and Secondary Specialist Education RSFSR, Novochoerkassk Order
of Labor Red Banner Polytechnic Inst im S. Ordzhonikidza); 150 copies;
price not given; (KL, 17-60, 142)

ANTONOV, B.S., kand.tekhn.nauk; PAVLOV, B.K., inzh.; PODGORNYY, L.N., inzh.

Use of river icebreakers to extend the navigation period on
inland waterways. Trudy LIT no.61:14-19 '64.

(MIRA 18:11)

PODGOBYNYY, L.; MAKSIMOV, A.

Output standards and reduction of labor input for manufactures. Sots.
trud no.4:108-113 Ap '57. (MIRA 10:6)
(Agricultural machinery industry--Production standards)

~~PODGOBYNYY, M. D.~~

Using separators at the Lvov cotton spinning mill. Obm.tekh.
opyt. [MLP] no.16:49-61 '56. (MIRA 11:11)
(Lvov--Cotton spinning)

PODGORNYY, M.D.

Economic efficiency of using separators. Tekst.prom. 18 no.4:5-7
Ap '58. (MIRA 11:4)

1. Glavnyy mekhanik L'vovskoy khlopchatobumazhnoy fabрики.
(Spinning machinery)

ASTANIN, L.P.; PODGORNYI, M.I.

Comparative morphological analysis of *Carassius carassius* L.
and *Carassius auratus gibelio* Block from the Novomar'yevskaya
Lagoon in Stavropol Territory. Vop. ikht. 3 no.3:447-459 '63.
(MIRA 16:10)

1. Stavropol'skiy sel'skokhozyaystvennyy institut, Stavropol'
krayevoy.

(Novomar'yevskaya Lagoon--Carp)

MIKOYAN, A.; PODGORNIY, N.; ZOTOV, V.; PAVLOV, D.; DUDIN, Yu.; KOROLEV, D.;
MASTEROV, N.; NEVSKIY, Ye.; KLEMENCHUK, A.; ARSENT'YEV, V.; GAVRILOV, A.;
PARSHIKOV, M.; ZHARSKIY, A.; SOKOLOVSKIY, V.

Vladimir Evdokimovich Chalyi; obituary. Kons.i ov.prom. 17 no.12:
48 D '62. (MIRA 15:12)
(Chalyi, Vladimir Evdokimovich, 1905-1962)

PODGORNIY, N.A., starshiy telegrafist

Concerning the saving of rubberized tape. Avtom., telem.i
svyaz' 6 no.4235 Ap '62. (MIRA 15:4)

1. Verkhovtsevskaia distantziya signalizatsii i svyazi
Pridneprovskoy dorogi.
(Telegraph--Equipment and supplies)

PODGORNIY, Nikolay Viktorovich

[Speech at the 22d Congress of the CPSU, October 19, 1961] Rech' na
s"ezde KPSS 19 oktiabria 1961 goda. Moskva, Gos. izd-vo polit. lit-
ry, 1961. 29 p. (MIRA 14, 11)

(Communist Party of the Soviet Union)
(Ukraine--Economic conditions)

KALIBERDA, V.M., kand. sel'skokhoz. nauk; SULIMOVSKIY, I.G., kand. sel'skokhoz. nauk; BUKHAN'KO, Ye.P.; LOGVINENKO, V.A., agronom; KOVALENKO, A.P.; PODGORNIY, P.I., prof. zaslužennyy deyatel' nauki Ukrainskoy SSR; FEDOTOV, V.A., aspirant; KURBATOV, I.D., agronom; KOZEYEV, V.I.; SHCHETININ, A.I.; KORCHAGIN, V.A., kand. sel'skokhoz. nauk; SOGURENKO, V.P.; KOSTROV, K.A., kand. sel'skokhoz. nauk; DULYA, F.M.; SHERSTNEV, N.F., aspirant

Crops preceding winter crops in various zones. Zemledelie 27 no.7:
26-45 J1 '65. (MIRA 18:7)

1. Ukrainskaya sel'skokhozyaystvennaya akademiya (for Kaliberda).
2. Odesskiy sel'skokhozyaystvennyy institut (for Sulimovskiy).
3. Odesskaya oblastnaya sel'skokhozyaystvennaya opyt'naya stantsiya (for Bukhan'ko). 4. Kolkhoz imeni Kirova, Mar'inskogo rayona Donetskoy oblasti (for Logvinenko). 5. Donetskaya oblastnaya sel'skokhozyaystvennaya opyt'naya stantsiya (for Kovalenko). 6. Voronezhskiy sel'skokhozyaystvennyy institut (for Fedotov). 7. Alekseyevskoye rayonnoye proizvodstvennoye upravleniye sel'skogo khozyaystva, Belgorodskoy oblasti (for Kurbatov). 8. Bezenchukskaya sel'skokhozyaystvennaya opyt'naya stantsiya (for Korchagin). 9. Direktor Bykovskoy opyt'noy stantsii bakhchevodstva (for Sogurenko). 10. Mordovskaya sel'skokhozyaystvennaya opyt'naya stantsiya (for Kostrov). 11. Direktor sovkhoza "Khleborobnyy", Smolenskogo rayona, Altayskogo kraya (for Dulya). 12. Altayskiy sel'skokhozyaystvennyy institut (for Sherstnev).

OCHERETIANYI, A., agronom; PODGORNYY P.I., prof., zaslushenny deyatel'
sel'skokhozyaystvennykh nauk RSFSR

Reviews. Zemledelie 27 no.5:93-95 Iy '65.

(MIRA 18:6)

1. Severo-Kavkazskaya mashinnoispytatel'naya stantsiya (for
Ocheretyany).

PODGORNYI, Pavel Il'ich, prof., doktor sel'khoz. nauk; GRACHEVA, V.S.,
red.; PROKOF'YEVA, L.N., tekhn. red.

[Plant growing] Rasteniyevodstvo. Izdanie 2., perer. Moskva,
Sel'khozizdat, 1963. 479 p. (MIRA 16:7)
(Field crops)

PODGORNIY, Pavel Il'ich, prof., doktor sel'skokhozyaystvennykh nauk;
GRACHEVA, V.S., red.; SOKOLOVA, N.N., tekhn.red.

[Plant growing] Rasteniyevodstvo. Moskva, Gos.izd-vo sel'khoz.
lit-ry, 1957. 608 p. (MIRA 10:12)
(Field crops)

KOTOV, P.F., kand.sel'skokhoz.nauk, glavnyy red.; ALEKSANDROV, N.P.,
kand.sel'skokhoz.nauk, red.; KARPENKO, V.P., red.; KVASNIKOV,
V.V., prof., doktor sel'skokhoz.nauk, red.; KOROL'KOV, V.I.,
prof., red.; PODGORNIY, P.I., prof., red.; SKACHKOV, I.A.,
kand.sel'skokhoz.nauk, red.; ZAPIVAKHIN, A.I., red.; KALASHNIKOVA,
V.S., red.; GUREVICH, M.M., tekhn.red.

[Farm management system in the Central Black Earth Region]
Sistema vedeniia sel'skogo khoziaistva v Tsentral'no-chno-
zemnoi polose. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1961.
470 p. (MIRA 14:4)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni
V.I.Lenina. 2. Zamastitel' direktora Instituta sel'skogo kho-
zyaystva imeni V.V.Dokuchayeva (for Kotov). 3. Direktor filiala
po Tsentral'no-chnozemnoy polose Vsesoyuznogo nauchno-issledova-
tel'skogo instituta ekonomiki sel'skogo khozyaystva (for Aleksandrov).
4. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk im. V.I.Lenina (for Kvasnikov). 5. Voronezhskiy zoovetinstitut
(for Korol'kov). 6. Voronezhskiy sel'skokhozyaystvennyy institut
(for Podgornyy). 7. Direktor Nauchno-issledovatel'skogo instituta
sel'skogo khozyaystva Tsentral'no-chnozemnoy polosy imeni V.V.
Dokuchayeva (for Skachkov).
(Central Black Earth Region--Agriculture)

PODGORNYI, P.I.

AUTHOR: Podgornyy, P.I., Doctor of Agricultural Sciences, Professor

3-2-9/32

TITLE: Substantially Improve the Organization of Higher Agricultural Education (Sushchestvenno uluchshit organizatsiyu vysshego sel'skokhozyaystvennogo obrazovaniya)

PERIODICAL: Vestnik vysshey shkoly, Feb 1957, # 2, p 33-36 (USSR)

ABSTRACT: The author refers to the Ministry's letter of 15 Sep 1956 opening wide possibilities to the VUZ institutes for creative initiative in improving the quality of specialist training. He says that teaching plans should have a certain rigidity and is opposed to the outlines drawn up by central institutions maintaining that each agricultural institute is able to prepare its own instruction plan. The author dwells on such plans and says that the Ministry's letter # M-100 remove existing deficiencies and indicates more efficient methods of theoretical and practical training. He describes how laboratory work is organized in the agronomic faculty of the Voronezh Agricultural Institute on a flexible schedule and on independent but carefully developed lessons. The results achieved are favorable. The improvement of laboratory work calls for

Card 1/2

3-2-9/32

To Substantially Improve the Organization of Higher Agricultural Education

better equipment and sufficient space. The author further states that the practical training of agriculturists requires a radical improvement. The basis must be the performance of a number of routine agricultural tasks. The author refers to articles by the professors N.I. Malov, L.A. Pel'tsikh, A.S. Radov and Dotsent N.K. Masalkin containing a number of valuable considerations on this point. The author is of the opinion that one of the obstacles for developing students' independent work are the examination periods requiring an approximate total of 6 months of the training time. The testing of knowledge should be done in the course of instruction. Should it prove possible to re-organize quickly the entire teaching process to fit the new conditions, the higher agricultural institutions will be able to provide a sharp increase in the quality of specialists. The author refers also to articles on these questions in # 7,11,12, of 1956 and # 1 of 1957, this magazine.

ASSOCIATION:

Voronezh Agricultural Institute (Voronezhskiy sel'skokhozyaystvennyy institut)

AVAILABLE:

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Card 2/2

L 19176-63 EPF(c)/EMI(m)/BDS AFFIC/ASD/APGC Pr. 4. MN

ACCESSION NR: AR3005460

S/0273/63/000/007/0035/0035 61

SOURCE: RZh. Dvigateli vnutrennego sgoraniya, Abs. 7.39.256

AUTHOR: Mayer, Ya. M., Podgorny*iy, V. F.

TITLE: Calculation of fuel evaporation in diesels

CITED SOURCE: Tr. Khar'kovsk. politekhn. in-ta, v. 34, 1961, 5-21

TOPIC TAGS: fuel delivery apparatus, diesel, fuel evaporation, fuel loss, evaporation

TRANSLATION: The article deals with the computation of the amount of fuel evaporation carried out for a number of described assumptions. To determine the amount of fuel vapor formed during the period of retarded self-ignition, the authors took elementary segments representing 1-3° of the angle of rotation of the crankshaft. The calculation of fuel evaporation was carried out for 2M and U-202 diesels. Experiments were carried out in which various laws of fuel delivery were achieved by changing cams on the 2M engine and employing a U-202 engine fuel injection regulator. From the amount of fuel evaporating during the

Card 1/2

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ACCESSION NR: AR3005460

period of retarded self-ignition, a calculation was made of the pressure increase during combustion; this was compared with corresponding values obtained from indicator diagrams. The greatest deviation of the combustion pressure between the two figures was 1.8%. The calculated results, without taking into account the drop distribution in the pilot flame and the rate of relative motion of the drops and air result in the exaggeration of the computed values of the maximum combustion pressure by up to 11.4%. The amount of evaporating and burning fuel during the period of retarded self-ignition is not proportional to the amount of fuel delivered during this period, and depending on the conditions in the cylinder and injection conditions varies from 11 to 63%. Six illustrations. Five tables. Bibliography with 30 titles. P. Shelest.

DATE ACQ: 08Aug63

SUB CODE: FL

ENCL: 00

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L 19352-63 EPT(c)/EWT(m)/BDS AFFTC/APCC Pr-1 MN
 ACCESSION NR: AR3005025 S/0273/63/000/006/0033/0033

SOURCE: RZh. Dvigateli vnutrennego sgoraniya, Abs. 6.39.276

AUTHOR: Podgorny*y, V. F.

TITLE: Drop distribution in fuel atomization in diesels

CITED SOURCE: Tr. Khar'kovsk. politekhn. in-ta, 34, 1961, 23-30

TOPIC TAGS: fuel combustion, fuel atomization, diesel engine, similarity theory

TRANSLATION: As a result of the treatment of experimental data using similarity theory, the author obtained relations among dimensionless criteria which make possible the unambiguous determination of the characteristic drop parameter x_0 within the limits of criterion variation $\pi_2 = (100-1260) \cdot 10^3$. He extended these relations for all cases of atomization for which the conditions of physical and geometric similarity of the process are observed, as well as for the similarity of initial boundary conditions, i.e., for all types of atomizers

Card 1/2

L 19352-63

ACCESSION NR: AR3005025

with cylindrical nozzle openings for injecting kerosene and diesel fuel with constant injection pressure. The deviation of computed values from the experimental ones does not exceed 3%. To determine the distribution characteristic for diesel fuel injection the author suggests an empirical equation expressing the function $n = f \cdot (P_{\text{excess injection}})$.

DATE ACQ: 01 Jul 63

SUB CODE: FL

ENCL: 00

Card 2/2

PODGORNIY, V.G., master.

Replacing the ball bearing in relays of the IT-80 series.
Energetik 4 no.4:21 Ap '56. (MIRA 9:7)
(Electric relays)

PODGORNYI, V.I., inzh.

Determining the coordinates of geodetic points by two inaccessible supporting points. Prom. stroi. 42 no. 7:43-44 '65.

(MIRA 18:8)

PODGORNYI, V.S.,

P. A. SETSOV, Groznenskiĭ Neftyanik 6, No. 11-12, 49-53,
(1936)

1. PODGORNYY, YA. M.
2. USSR (600)
4. Tobacco
7. Planting tobacco by machinery, Dost. sel'khoz., No. 5, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

PODGORNYI, YA. M.

Tobacco - Krasnodar Territory

Work of leading operators of SR-6M tobacco planting machines in setting out tobacco plants in Krasnodar Territory. Tabak 14, No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

1. PODGORNYI, Ya. M.
2. USSR (600)
4. Krasnodar Territory-Tobacco
7. Work of leading operators of SR-6M tobacco planting machines in setting out tobacco plants in Krasnodar Territory. Tabak 14 no. 1, 1953

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

PODGORNYI, Ya.M., kand. sel'skokhoz. nauk

External design of agricultural machines and tractors. Trakt.
i sel'khoz mash. 33 no.11:34-35 N '63. (MIRA 17:9)

PODGORNYI. A. I.

(How we expect to develop the economy in agriculture during the next five years) Moskva, Gos. izd-vo, 1928. 64 p. (Krest'ianam o resheniakh k5-go s"ezda Vsesoiqznoi Kommunisticheskoi partii (bol'shevikov) no. 6) (54-46023)

HD1992.P6

PODGORNYI, A. I., ed.

Profiles of specialists of Socialist industry: workers (factory schools) technicians (technical schools) and engineers (schools of engineering); articles and materials) Moskva, Gos. nauchno-tekhnicheskoe izd-vo, Sektor kadrov. Profili spetsialistov... 1931 (Card 2, 40-19932)

1931. 216 p. (40-19932)

1. Technical education - Russia. I. Podgornyi, A. I., ed.

PODGORNYI, Ya. M., Cand Agric Sci (diss) -- "Investigation of the physico-mechanical properties of the tobacco plant and the basic agrotechnical requirements for a tobacco-harvesting machine". Krasnodar, 1956. 11 pp
(Min Higher Educ USSR, Kuban Agric Inst), 100 copies (KL, No 10, 1960, 134)

KIRYUSHKIN, V.I.; DOSHCENKO, V.N.; PODGORODETSKAYA, V.N.; TOMARSKAYA, Z.B.

Clinical manifestations in single exposure of the human organism to
Cs¹³⁷. Med. rad. 8 no.11:33-40 N '63. (MIRA 17:12)

L 34124-65 ENG(j)/ENT(m) GS

ACCESSION NR: AT5006128

S/0000/64/000/000/0225/0229

AUTHOR: Baysogolov, G. D.; Podgorodetskaya, V. N.

TITLE: Hematopoiesis in dogs during subacute intoxication induced by plutonium-239

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 225-229

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, hemopoiesis, erythrocyte, leukocyte, bone marrow

ABSTRACT: Eight stock-bred dogs received a single intravenous injection of 2 μ c/kg of the nitrate form of plutonium. A moderate wavelike decrease was noted throughout the experiment (one year) in the number of erythrocytes; it was most pronounced between the 10th and 14th weeks (averaging 22%) and after 8 months (15%). The hemoglobin concentration remained unaffected until the last three months when it rose by 12% on the average. The reticulocyte count decreased sharply from the first few days and remained at a low level for 22 weeks, when restoration occurred in some of the dogs. A few oxyphilic erythroblasts and Golgi bodies appeared the 4th week. The changes in the number of leukocytes were more pronounced. After a slight

Card 1/2

L 34124-65

ACCESSION NR: AT5006128

increase during the first 3 days, they gradually decreased to 40% below the original count and thereafter remained more or less at this depressed level. The first examination of bone marrow (7th day) revealed a decrease in the absolute number of nucleated cells, which reached a minimum (about 25% of the original level) by the 4th week. Eventually the number of myelokaryocytes increased slightly (to 30%). This decrease in the total number of nucleated cells was caused by a reduction in both the erythrocytes and, even more, the leukocytes. Thus, the findings indicate that intravenous injection of 2 $\mu\text{c/kg}$ of Pu^{239} rapidly produces destructive changes in the bone marrow of dogs which affect the composition of the peripheral blood. Orig. art. has 3 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Cord 2/2

5

Principles in the production of motion-picture film base.
P. V. Kozlov, B. K. Podgorodetskiy, R. V. Zueva and
P. S. Sherman. *Kinematografiya* 7, No. 1, 41-7 (1941);
cf. C. A. 35, 16347, 50437. — A theoretical discussion of the
formation of stable films free from shrinkage is given.
The production of 2 different types of films is possible:
isotropic films with completely disoriented chains char-
acterized by the equil. state of the structure, and aniso-
tropic films, whose structures are almost in the equil-
state and which are characterized by the disoriented state
of the at. groups in the individual chains with general
orientation of the chains in the whole. Anisotropic films
in which the process of relaxation of the individual mem-
bers of the chains is allowed to go to completion are the
more stable.
W. R. Richler, P. T. Newsome

ASAC-51A BIBLIOGRAPHICAL LITERATURE CLASSIFICATION

CP

PROCESSES AND PROPERTIES INDEX

5

Decrease of static electricity on motion-picture film by application of a varnish coating. E. K. Podgorodetskiy. *Kinofotokhim. Prom.* 1940, No. 3, 32-6. An effective method of reducing static electricity on motion-picture film consists in removing the charge at the moment of its formation by means of a coating on the film surface consisting of 2 components in which friction produces opposite elec. charges. Different cellulose esters were investigated as to their charge after friction with various materials. It was found that cellulose nitrate always shows a neg. charge, while cellulose acetate is usually positively charged, when rubbed against other materials. Depending on the proportion of the ester mixt., different intensities and signs of charges could be obtained. A thin coating of cellulose acetate applied to a cellulose nitrate film therefore considerably reduced static electricity. The optimal concn. of cellulose acetate in the solvent was 1%. Humidity did not greatly affect the difference between static electricity on coated and uncoated films, although it was slightly greater when the humidity of the air was low. A different intensity of charge was also noted, if the same type of film came in frictional contact with different materials.

W. R. Eichler

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM: DIVISION

SEARCHED

INDEXED

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DATE

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BY

INITIALS

REMARKS

23

Use of dibutyl phthalate as plasticizer for cellulose nitrate films. E. K. Podgorodetskiy and A. B. Kagan-shaya. *Kinofotokhim. Prom.* 1939, No. 8, 43-5.—A study of several new plasticizers for cellulose nitrate and acetate films carried out by the NIKFI labs. yielded good results. Especially, dibutyl phthalate (I) was found to be an excellent plasticizer for cellulose nitrate film. In comparison with camphor (II), which is commonly used as plasticizer, it has several advantages. It mixes well in all proportions with the liquid components of the film, is considerably less volatile than camphor, insol. in water, stable and much cheaper than camphor. It is, therefore, to be preferred to the latter. The results of parallel investigations of the effect of I and II on the properties of cellulose nitrate film showed that in artificial aging at 100° the losses of II are much higher and, therefore, the plasticity of the film can be guaranteed for a much shorter period than with I. A comparison of the mech. properties of films contg. these 2 plasticizers after 10 hrs. at 100° revealed a much greater loss of the flexibility and stretching power but less shrinking in films contg. II. However, after processing the film, shrinkage was less in the film contg. I. The stability of the film contg. I was also greater than that of the film contg. II. W. R. Eichler

LOLA, V.N., inzh.; PODGORODETSKIY, A.A., inzh.

New developments in research. Stal' 25 no.10:937 0 '65.
(MIRA 18:11)

VIRANOVSKIY, V.V.; PODGORODETSKIY, A.A.

Improving the quality of the delivered product. Metallurg 8 no.11:
32-33 N '63. (MIRA 16:12)

137-58-6-13416

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 325 (USSR)

AUTHOR: Podgorodetskiy, A. A.

TITLE: New Types of Low-alloy Steels, Their Production and Applications (Nizkolegirovannyye stali novykh marok, ikh proizvodstvo i primeneniye)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 168-172

ABSTRACT: The author describes the smelting, casting, and rolling operations performed at the "Zaporozhstal" plant on low-alloyed 14KhGS steel employed in the manufacture of welded pipes 720 mm in diameter. Lamination of edges is the primary source of spoilage during rolling of sheets of 14KhGS steel. Studies of the causes of spoilage made it possible to establish optimal technological procedures.

1. Steel--Production 2. Steel--Applications

M. G.

Card 1/1

137-58-6-11828

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 91 (USSR)

AUTHOR: Podgorodetskiy, A.A.

TITLE: Technical and Economic Indices Relative to Top and Bottom
Pouring of Steel (Tekhniko-ekonomicheskiye pokazateli raz-
livki stali sverkh i sifonom)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol
18, pp 373-377

ABSTRACT: Experiments in the pouring of rimmed and killed steel have
been conducted at the Zaporozhstal' plant. Conversion to top
pouring of killed grades of steel made possible virtually com-
plete elimination of rejects due to lamination of sheet. St 08kp
steel showed no significant difference in terms of lamination,
whether top-poured or bottom-poured, although the surfaces of
the top-poured ingots were somewhat poorer. It was estab-
lished that when rimmed 08 kp steel was top poured there is an
increase in rejects due to internal fissures and exposed honey-
comb blowholes. There is an increase in scab damage to hot
sheet. Scab damage is three times as great on cold-rolled
sheet that is top poured. Complaints from consumer plants

Card 1/2

Technical and Economic (cont.)

137-58-6-11828

indicate that top-poured metal results in a larger amount of rejects. It is noted that the metal of ingots made by bottom pouring is contaminated to a somewhat greater degree by silicate inclusions. The advantages of bottom pouring of rimmed metal are noted. Killed carbon, manganese, and alloy steels are top poured directly from the ladle to form ingots of 12-12.5 t. In the case of 3SP steel, rejects in the open-hearth shop on top pouring were only 1/12 as many, and slab rejects were only 1/6 as many as with bottom-poured ingots. Studies made at the plant established that when the temperature of the metal and pouring speed was increased, there was an accompanying increase in slab rejects. Top pouring of killed metal results in a considerable reduction in metal losses as compared with bottom pouring in such categories as short pours, internal bursts, fissures, and cracks in slabs, and also in a reduction of lamination.

V.P.

1. Steel--Production
2. Steel--Quality control
3. Steel--Properties
4. Steel--Economic aspects

Card 2/2

Distr: 1E43/4E2c

✓ Making clad ingots and slabs. V. A. Pilyonov, A. A. Podolskiy, F. A. Ksenzuk, and V. N. Lota. Sep 18, 1983-DI(1983). A clad slab of stainless steel coated with NH_4Cl was placed at one of the sides of an ingot mold, which was then filled with molten steel. The solidified duplex ingot was rolled it to a slab.

J. D. Gai

[Handwritten signature]

6
2

PODGOREDETSKIY, A. A.

MARAKHOVSKIY, I. S., inzhener; ~~PODGOREDETSKIY, A. A., inzhener.~~

Production of nonaging steel. Metallurg 2 no. 5:11-13 My '57.

(MIRA 10:6)

1. Nachal'nik staleplavil'noy laboratorii TSentral'noy zavodskoy laboratorii (for Marakhovskiy). 2. Rukovoditel' gruppy TSentral'noy zavodskoy laboratorii Zavod "Zaporozhstal'" (for Podgoredetskiy).
(Steel, Automobile)

18
✓ Production of non-aging steel. I. S. Marchuk
A. A. Pudgorovetskiy
Low-carbon steel (0.02% C) is produced by the
method of continuous casting. The steel is
scale after 10 hours of exposure to air. It is
detailed surface stamping. Typical stamp of a
steel 0.02% C, 0.04% Mn, 0.01% P, 0.01% S, 0.01% Al.
V. N. Bednarskiy

Rel
MT

Podgorodetskiy, A. A.

AUTHORS: Filonov, V.A., Podgorodetskiy, A.A., Ksenzuk, F.A. and
Lola, V.I. (Engineers) 133-2-19/19

TITLE: From Experience in Production of Two Layer (Clad) Ingots
and Slabs (Opyt proizvodstva dvusloynnykh slitkov i slabov)

PERIODICAL: Stal', 1958, Nr 2, pp.188-191 (USSR)

ABSTRACT: The technology of production of clad ingots and slabs
from steels 20K and X18H12M27 developed on the Zaporozhstal'
Works is described. The method consists of teeming steel
20K into an ingot mould into which a plate from stainless
steel was fixed (Figs.1, 2). The preparation of stainless
plate, heating (Table 2) and rolling clad ingots, dimensions
of clad slabs (Table 2) and mechanical properties of clad
plate produced (Table 3) are given. There are 3 tables and
4 figures.

ASSOCIATION: Zaporozhstal' Works (Zavod "Zaporozhstal'")

AVAILABLE: Library of Congress.

Card 1/1

Podgorodetskiy, A. A.

AUTHOR: Marakhovskiy, I. S. (Engineer), (Head of the steel-melting laboratory, and Podgorodetskiy, A. A. (Engineer); (Group Leader), at the Central Works Laboratory. 130-5-6/22

TITLE: Production of Non-Ageing Steel. (Proizvodstvo Nestareyushchey stali).

PERIODICAL: "Metallurg" (Metallurgist), 1957, No. 5, pp. 11-13 (USSR).

ABSTRACT: After pointing out the advantages of a non-ageing steel for deep drawing, the authors describe work carried out at the "Zaporozhstal'" works together with the Central Research Institute of Ferrous Metallurgy on the production of such a steel. The steel was melted in 200-ton open hearth furnaces, with oxygen enrichment of the flame. Two heats of type 08kn very deep drawing steel were produced with 0.03-0.05% vanadium and one heat with 0.05-0.07% aluminium. The respective compositions were 0.06, 0.06, 0.08% C; 0.33, 0.37, 0.36% Mn; 0.010, 0.012, 0.009% P; 0.022, 0.023, 0.025% S; 0.04, 0.030% V; 0.0, 0.07% Al. Compositions and other process parameters at melt-down, refining boil and deoxidation are tabulated, and details are given of the additions of deoxidizers. Vanadium-containing heats were bottom poured into moulds, four

Card 1/3

Production of Non-Ageing Steel. (Cont.) 130-5-6/22
being a finer ferrite grain. These microstructures
are illustrated. Neither type of steel aged. The
vanadium-containing steel has been successfully used
at the Gor'ky Motor Works for the Production of M-20
and ZIM cars, great reduction in rejects being obtained.
At the request of these works cold-rolled sheets for
the very important parts of cars are being made from
non-ageing vanadium-containing steel. Experiments with
other ferr-alloy additions have also been carried out,
but no details are given. There are 4 tables, 2 figs.

ASSOCIATION: "Zaporozhstal'"Works ("Zaporozhstal'").

AVAILABLE:

Card 3/3

LEYKIN, I.M., kandidat tekhnicheskikh nauk; MARAKHOVSKIY, I.S.; PODGORODETSKIY,
A.A.

Production of low-alloy steel at the Zaporozhstal' plant. Metallurg no.4:
13-15 Ap '56. (MLRA 9:9)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii
(for Leykin). 2. Nachal'nik staleplavil'noy laboratorii TsZL (for Mara-
khovskiy). 3. Rukovoditel' gruppy TsZL "Zavod Zaporozhstal'" (for Podgerede-
tskiy).
(Zaperozhye---Metallurgical plants) (Steel alloys)

L 13635-66 EWT(d)/EWT(1)/EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWP(1)/EWA(c)
 ACC NR: AP5025134 MJW/JD/HW/JT

SOURCE CODE: UR/0133/65/000/010/0937/0957

AUTHOR: Lola, V. N. (Engineer); Podgorodetskiy, A. A. (Engineer)

ORG: none

TITLE: Research of Plant Laboratories and Institutes at the Zaporozhstal' Plant

SOURCE: Stal', no. 10, 1965, 937

TOPIC TAGS: stainless steel, austenitic steel, ferritic steel, steel rolling, hot rolling, cold rolling, steel mechanical property, OKh18T1 steel, Kh17N4AG9 steel, Kh17N13M2T steel, Kh17N13M3T steel, steel, sheet metal, yield stress, tensile strength, elongation

ABSTRACT: Experimental production of ⁴cold-rolled ⁴OKh18T1 ⁴steel sheets has been performed at the Zaporozhstal' plant in cooperation with the Moscow Institute of Aviation Technology. The 12-ton ingots were soaked at 1180—1200C for 1.5—2 hr, then rolled in 13—17 passes into slabs 135 x 1060 x 2000—2250 mm. The hot (1000—1080C) slabs were furnace cooled to 350C, straightened at 350—250C, and conditioned by planing. The slabs then were hot rolled in a 1680 continuous mill into strip 3 mm thick, which, after pickling, was cold rolled in a 1680 reversing mill for seven passes into strip 0.8 mm thick. Cold-rolled strip was annealed at 830—850C, air cooled, pickled, and cut into sheets which were leveled in a two-high temper mill. The finished sheets had a tensile strength of 55—65 kg/mm² and an elongation of 16—55%. The yield of satisfactory quality sheets amounted to 67.1% and the ingot consumption was 621.771.2.001.5

Card 1/2

L 13635-66

ACC NR: AP5025134

tion, to 1.801 tons per ton of sheets, compared to 1.23 tons for Kh18N10T steel. Cold-rolled Kh17N1AG9 (EI-878) steel (AISI-201) sheets 0.8-2 mm thick and 1000-mm wide were also produced on an experimental scale by roughly the same method as that used for Kh18N10T (AISI-321) steel. However, the workability of EI-878 steel is almost 100% lower and the metal waste 50% higher than those of Kh18N10T steel. The annealing time for hot- and cold-rolled strip of EI-878 steel was 20% longer and the pickling time for cold-rolled strip, 80% longer than those for Kh18N10T steel. The yield of cold-rolled strip was also lower by 30 to 50%. The finished sheets had a tensile strength of 75-95 kg/mm², a yield strength of 45-60 kg/mm², and an elongation of 45-65%. EI-878 steel has an almost fully austenitic structure; the ferrite content did not exceed 5%. The plant also improved the procedure for slab rolling from Kh17N13M2T and Kh17N13M3T stainless steels (AISI-316Ti). Slabs were rolled by the same method as that used for Kh18N10T steel (AISI-321), which resulted in a poor surface quality with continuous tears and cracks up to 15 mm deep. In the new procedure, the ingots are conditioned before being placed into soaking pits, heated with double soaking at 1180-1200C for 4-6 hrs. and at 1250-1260C for 4-6 hrs., and rolled without water cooling of mill rolls. This procedure greatly improved the quality of slabs. [ATD: 4162-F]

SUB CODE: 11,13 / SUBM DATE: none

Stainless Steel 45,55,18

Card 2/2 HW

PODGORODETSKIY, I.A.; SLEPYAN, S.G.

Geography of communications is a composite part of economic geography.
Izv. AN SSSR. Ser. geog. no.4:119-127 JI-Ag '63. (MIRA 16:8)
(Communication and traffic)

PODGORODETSKIY, Ivan Aleksandrovich; RAZGOVOROV, Aleksandr Vasil'yevich;
GORELIK, S.A., otv. red.; KAZ'MINA, R.A., red.; SLUTSKIN, A.A.,
tekhn. red.

[Telecommunication statistics] Statistika svyazi. Moskva, Svyaz'-
izdat, 1962. 326 p. (MIRA 15:11)
(Telecommunication—Statistics)

PODGORODETSKIY, I.A., kand.ekonom.nauk, dotsent

New stage in the development of business accounting at communications enterprises. Vest. sviazi 21 no.1:15-17 Ja '61.

(Telecommunication--Accounting) (MIRA 15:5)

PODGORODETSKIY, I.A., dots., kand.ekon.nauk

Telecommunication as a branch of physical production. Vest.sviazi
18 no.11:17-19 N '58. (MIRA 11:12)
(Telecommunication)

VISHNEVSKIY, A.A., doktor ekonom. nauk, prof.; PODGORODETSKIY, I.A., prof.;
SERGEYCHUK, K.Ya., kand. tekhn. nauk; SOLOVEYCHIK, E.M., kand.
ekonom.nauk; TOCHIL'NIKOV, G.M., kand. ekonom. nauk; SHAYN, P.A.,
prepodavatel'; TRIFONOV, V.I., red.; ROMANOVA, S.F., tekhn. red.

[Economics of the communication system] Ekonomika svyazi. Moskva,
Gos. izd-vo lit-ry po voprosam svyazi i radio, 1961. 279 p.

(Communication and traffic)

(MIRA 14:8)

25(3)

AUTHORS:

SOV/111-59-8-15/30
Podgorodetskiy, I.A., Docent, Srapicnov, O.S., Chief,
and Smorchkova, Ye.P., Senior Scientific Worker

TITLE:

Determination of the Income of Communications Enterprises on Cost Accounting

PERIODICAL:

Vestnik svyazi, 1959, Nr 8, pp 17-19 (USSR)

ABSTRACT:

In this article the authors deal with the problem of determining the income of enterprises operating on the cost accounting system, based on a study of the problem by the Laboratoriya ekonomiki svyazi TsNIIS (Laboratory of Communications Economics of the TsNIIS) in search of a single principle for determining income. The problem is presented generally in terms of income sources for communications enterprises generally, and value of production by the enterprise (in term of the monetary expression for the amount of socially necessary labor consumed in production), and the theoretical basis for the solution laid. Basically, it is stated, if the income derived from charges made for services equals the monetary expression for the

Card 1/4

Determination of the Income of Communications Enterprises on Cost Accounting

SOV/111-59-8-15/30

value of production, this income may be considered that income which belongs to the enterprise. The authors propose a means of determining the income of an enterprise on the basis of the correlation existing between income from tariffs and the income belonging to the enterprise which is established in the plan, and outline this method. The correlation described is found to be stable for most communications enterprises over a period of several years. Several questions relating to the operation of an enterprise on this method are dealt with, particularly with regard to fulfillment of plans. The problem of enterprises with incomes from tariffs lower than the value of production is dealt with; according to the TsNIIS out of 419 communications offices (kontora svyazi) only 13 are operating in this way. Treated also is the question of enterprises (e.g. the LTU) without income from tariffs, and the question of profit formation in such enterprises. The authors

Card 2/4

Determination of the Income of Communications Enterprises on Cost Accounting SOV/111-59-8-15/30

then outline the system of determining income according to their method for different types of enterprises. This system is based on computations done at the Laboratory of Communications Economics, TsNIIS, with the aid of materials from 920 district (rayón) communications offices, 20 consolidated municipal enterprises, 20 post offices, 19 MTS, 26 GTS, 29 DRTS, 16 telegraph offices, 17 radio enterprises, 36 ITU, and 17 OPP. A check of the effectiveness of the proposed method was made using data from the Kiyev, Minsk, and Gor'kiy Communications Administrations; detailed comparative calculations of the results of plan fulfillment, and dynamics of growth were made by the proposed and existing methods of determining income. Conferences devoted to the new system, in which people from communications ministries and administrations, selected enterprises, and rayon communications offices took part, were held; a "positive attitude" to the method was shown. The

Card 3/4

Determination of the Income of Communications Enterprises on Cost Accounting SOV/111-59-8-15/30

editors of "Vestnik svyazi" ask for comments from readers on the subject matter of this article. There is 1 table.

ASSOCIATION: Laboratoriya ekonomiki svyazi TsNNIISa (Laboratory of Communications Economics of the TsNIIS); TsNIIS

Card 4/4

SOV-111-58-10-13/29

AUTHOR: Podgorodetskiy, I.A., Candidate of Economical Sciences,
Docent

TITLE: Communications - a Branch of Material Production (Svyaz' -
otrasl' material'nogo proizvodstva)

PERIODICAL: Vestnik svyazi, 1958, Nr 10, pp 16-18 (USSR)

ABSTRACT: The author investigates the economic nature of communications,
citing several works of Karl Marx. He differentiates between
communications and other services, like hairdressers,
etc. He comes to the conclusion that communications is a
branch of material production, even in cases where non-
productive persons or organizations are served. The article
is to be continued.

1. Communication systems--Economic aspects

Card 1/1

PODGORODETSKIY, Ivan Aleksandrovich; SHOLOMOVICH, I.A. otv. red. [deceased];
EYDEL'MAN, B.I., red.; ROMANOVA, S.F., tekhn. red.

[The economic analysis of the operations of communication and traffic enterprises] Ekonomicheskii analiz deiatel'nosti predpriatii sviazi. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1961. 323 p.
(MIRA 14:11)

(Communication and traffic--Accounting)